

WHAT IS CLAIMED IS:

1. A method of forming fine patterns comprising: covering a substrate having photoresist patterns with an over-coating agent for forming fine patterns, removing the unwanted over-coating agent that has been deposited on the edge portions and/or the back side of the substrate, applying heat treatment to cause thermal shrinkage of the over-coating agent so that the spacing between adjacent photoresist patterns is lessened by the resulting thermal shrinking action, and removing the over-coating agent substantially completely.
2. The method of forming fine patterns according to claim 1, wherein the unwanted over-coating agent that has been deposited on the edge portions and/or the back side of the substrate is removed using a remover fluid containing water or a water-soluble organic solvent as a main component.
3. The method of forming fine patterns according to claim 2, wherein the water-soluble organic solvent is at least one member selected from the group consisting of alcoholic solvents, sulfoxide-based solvents, sulfone-based solvents, amide-based solvents, lactam-based solvents, imidazolidinone-based solvents, lactone-based solvents, glycolic solvents and ether-based solvents.
4. The method of forming fine patterns according to claim 1, wherein the over-coating agent contains a water-soluble polymer.
5. The method of forming fine patterns according to claim 4, wherein the water-soluble polymer is at least one member

selected from the group consisting of alkylene glycolic polymers, cellulosic derivatives, vinyl polymers, acrylic polymers, urea polymers, epoxy polymers, melamine polymers and amide polymers.

5 6. The method of forming fine patterns according to claim 1, wherein the over-coating agent is an aqueous solution having a solids content of 3 - 50 mass%.

7. The method of forming fine patterns according to claim 1, wherein the heat treatment is performed at a temperature 10 that does not cause thermal fluidizing of the photoresist patterns on the substrate.